

**TECHNICAL REVIEWERS' COMMENTS**  
**LRC-LIX-(59)–A**

**“Review of North Dakota Regulations, Standards, and Practices Related to the Use of Coal Combustion Products”**

Submitted by: Energy & Environmental Research Center;  
Request for: \$12,000; Total Project Costs: \$36,000;  
Project Manager: Tera D. Buckley; Project Duration: 12 Months

**1. OBJECTIVES**

The objectives or goals of the proposed project with respect to clarity and consistency with Industrial Commission/Lignite Research Council goals are: 1 - very unclear; 2 - unclear; 3 - clear; 4 - very clear; or 5 - exceptionally clear.

**Reviewer 06-10 (Rating: 5)**

The objectives of this project are to define the key factors affecting use of CCPs in ND, with an interest in increasing the amount of CCPs that are used beneficially. This objective is clearly consistent with the goals of the Lignite Council. 5 – exceptionally clear.

**Reviewer 06-11 (Rating: 2)**

The proposal does not state which of the statutory goals and purposes that apply.

**Reviewer 06- 12 (Rating: 3)**

The objective of this project is to determine what current policies, regulations and economic factors are limiting the fraction of Coal Combustion (CCP) wastes that is recycled in North Dakota. Success in this project will reduce the local environmental impact of lignite use in the state by reducing the number of additional CCP landfill sites that must be developed in the future as a repository for CCP wastes.

**2. ACHIEVABILITY**

With the approach suggested and time and budget available, the objectives are: 1 - not achievable; 2 - possibly achievable; 3 - likely achievable; 4 - most likely achievable; or 5 - certainly achievable.

**Reviewer 06-10 (Rating: 3)**

The scope of work that has been proposed is feasible within the time frame and budget that has been allocated. I am less convinced that the objectives will be accomplished within the time frame, as the methods are not well defined in the context of clearly identifying the obstacles. 3 – likely achievable

**Reviewer 06-11 (Rating: 2)**

Technical support, and administrative support (secretarial services), for tasks 1 through 4 are underfunded.

**Reviewer 06-12 (Rating: 4)**

The budget appears to match the requirement for collecting and organizing the needed information.

### 3. **METHODOLOGY**

#### **Reviewer 06-10 (Rating: 3)**

The methodology is adequate, but lacks detail. My understanding is that a series of discussion groups will be held with various categories of stakeholders, and these groups will define the obstacles affecting CCP use or the potential problems with CCP use. Whether these groups will be able to truly identify the critical barriers is unclear. Having a background on what has transpired in other Midwestern states where CCP usage may be higher (e.g., Minnesota, Wisconsin, Iowa) would help. However, the background provided in the proposal suggests that the investigators are unaware of the history in these neighboring states. 3 – average.

#### **Reviewer 06-11 (Rating: 4)**

However, the “Project Summary” indicates that CCP have not reached optimal levels – without establishing those optimal levels.

While mentioning similar CCP utilization studies for Texas, Florida and Pennsylvania, the proposal does not address the unique characteristics of CCP from combustion of local lignite – such as sodium and sulfate.

#### **Reviewer 06-12 (Rating: 3)**

The plan for gathering and organizing the desired information at a series of meeting with stakeholders appears to be an effective approach.

### 4. **CONTRIBUTION**

The scientific and/or technical contribution of the proposed work to specifically address Industrial Commission/LRC goals will likely be: 1 - extremely small; 2 - small; 3 - significant; 4 - very significant; or 5 - extremely significant.

#### **Reviewer 06-10 (Rating: 5)**

This project is more oriented towards policy and perception than science. Thus, a scientific or technical contribution is difficult to assess. However, if successful, the contribution from the project could be very important to ND and to the Lignite Council. For example, the project may identify technical barriers that need further study for CCP use to increase, and identifying these technical barriers could be particularly beneficial to the Lignite Council and ND. From this perspective, the contribution could be extremely significant. 5 – extremely significant

#### **Reviewer 06-11 (Rating: 3)**

*NOTE: Reviewer 06-11 provided no comments.*

#### **Reviewer 06-12 (Rating: 3)**

This information will be valuable to the Commission/Council in identifying ways to reduce the environmental impact of current and future use of lignite.

## 5. AWARENESS

The principal investigator's awareness of current research activity and published literature as evidenced by literature referenced and its interpretation and by the reference to unpublished research related to the proposal is: 1 - very limited; 2 - limited; 3 - adequate; 4 - better than average; or 5 - exceptional.

### **Reviewer 06-10 (Rating: 2)**

Currently there is a great deal of interest in CCP use in the Midwest. There is also significant controversy brewing in some neighboring states. For example, one locality in Minnesota recently banned the use of fly ash due to concerns regarding Hg and As. The proposal gives the impression that PIs are unaware of what is going on regarding CCP use in the Midwestern US, and this seems vital to the project. I would expect that ND stakeholders would want to know more about how their neighboring Midwestern states are dealing with CCP use than far away states such as those mentioned by the PIs (TX, FL, and PA). I would urge the PIs to study how ND's neighbors are addressing these issues.

USEPA has also undertaken some recent initiatives to more fully understand the risks posed by CCPs. There is also some discussion of developing federal testing standards for evaluating CCPs for beneficial use. This issue is not considered in the proposal, but seems critical, as it may affect CCP use in ND.  
2 – limited

### **Reviewer 06-11 (Rating: 3)**

*NOTE: Reviewer 06-11 provided no comments*

### **Reviewer 06-12 (Rating: 3)**

The PI has cited appropriate sources of information.

## 6. BACKGROUND

The background of the investigator(s) as related to the proposed work is: 1 - very limited; 2 - limited; 3 - adequate; 4 - better than average; or 5 - exceptional.

### **Reviewer 06-10 (Rating: 2.5)**

There is very little information in the proposal to document the PI's capabilities to complete the objectives. However, the references indicate that Ms. Pflughoeft-Hassett has experience regarding CCP issues. The EERC website also suggests that the institution has expertise in this area. 2 – limited to 3 – adequate

### **Reviewer 06-11 (Rating: 3)**

Additional biographical data would have been helpful.

### **Reviewer 06-12 (Rating: 4)**

The investigators proposed for this project have participated in similar projects at EERC that were funded by EPA that investigated this issue in Texas, Florida, and Pennsylvania. They are well-qualified for this work.

## 7. PROJECT MANAGEMENT

The project management plan, including a well-defined milestone chart, schedule, financial plan, and plan for communications among the investigators and subcontractors, if any is: 1 - very inadequate; 2 - inadequate; 3 - adequate; 4 very good; or 5 - exceptionally good.

### **Reviewer 06-10 (Rating: 4)**

This project is straightforward and the schedule being proposed is reasonable. The budget request is very modest and, if successful, the project will be a bargain. The devotion of three tasks to getting organized suggests that communication amongst the project team should be good. 4 – very good

### **Reviewer 06-11 (Rating: 4)**

Very good, except for financial plan.

### **Reviewer 06-12 (Rating: 4)**

This is a relatively small project with a few people involved part-time for a few months of effort. The required steps are well understood and well organized.

## 8. EQUIPMENT PURCHASE

The proposed purchase of equipment is: 1 – extremely poorly justified; 2 – poorly justified; 3 – justified; 4 – well justified; or 5 – extremely well justified. (Circle 5 if no equipment is to be purchased.)

### **Reviewer 06-10 (Rating: 5)**

No equipment is to be purchased. 5 – extremely well justified. (Circle 5 is no equipment it to be purchased.)

### **Reviewer 06-11 (Rating: 5)**

*NOTE: Reviewer 06-11 provided no comments*

### **Reviewer 06-12 (Rating: 5)**

No equipment is to be purchased.

## 9. FACILITIES

The facilities and equipment available and to be purchased for the proposed research are: 1 – very inadequate; 2 – inadequate; 3 – adequate; 4 – notably good; or 5 – exceptionally good.

### **Reviewer 06-10 (Rating: 5)**

This project consists of meetings and summarizing comments. Thus facilities and equipment are not relevant. For this reason, I have selected 5 – exceptionally good (following the instructions in comment 8).

### **Reviewer 06-11 (Rating: 4)**

*NOTE: Reviewer 06-11 provided no comments*

**Reviewer 06-12 (Rating: 4)**

No facilities or equipment are required. However, this project is a “people-project” that requires skills in developing the right questions, good skills for interacting with people, listening carefully, and extracting the key bits of information that can be used to develop an action plan. The investigators appear to have these skills. My rating is in recognition of my judgment of those skills.

**10. BUDGET**

The proposed budget "value"<sup>1</sup> relative to the outlined work and the financial commitment from other sources<sup>2</sup> is of: 1 - very low value; 2 - low value; 3 - average value; 4 - high value; or 5 very high value.

**Reviewer 06-10 (Rating: 5)**

If this project is successful, the value could be extremely high. Power companies have committed financially to this project, which is a strong indication that the project will be high value if successful. As noted previously, the budget request is very modest and the project will be a bargain if successful. 5 – very high value.

**Reviewer 06-11 (Rating: 4)**

*NOTE: Reviewer 06-11 provided no comments*

**Reviewer 06-12 (Rating: 5)**

The funding request of \$12,000 represents 1/3 of the proposed budget for the project. It provides a highly leveraged opportunity for NDIC/LRC to gather needed information.

**OVERALL COMMENTS AND RECOMMENDATION:**

Please comment in a general way about the merits and flaws of the proposed project and make a recommendation whether or not to fund.

**Reviewer 06-10 (Rating: FUND)**

This proposal has a good idea, but the methods are not particularly well developed and knowledge of regional issues regarding CCP use are lacking. The PIs have also provided little evidence that they have the expertise needed to conduct the work (the qualifications section is lacking). However, the budget is very modest, and the potential outcomes could be significant. Thus, despite the shortcomings of this proposal, I recommend that it be funded. If the proposal is funded, please urge the PIs to look at CCP use in the region much more carefully.

VI-A-2-5

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<sup>1</sup> “Value” – The value of the projected work and technical outcome for the budgeted amount of the project, based on your estimate of what the work might cost in research settings with which you are familiar.

<sup>2</sup> Financial commitment from other sources – A minimum of 50% of the total project must come from other than Industrial Commission sources to meet the program guidelines. Support greater than 50% from Industrial Commission sources should be evaluated as favorable to the application.

**Reviewer 06-11 (Rating: FUNDING MAY BE CONSIDERED)**

Page 7, item 1: It's unlikely that the project, before its completion timeline, will be able to qualitatively measure CCP utilization rate changes occurring as a direct result of the proposed review. The standard of success would be an improvement over utilization rates before the review. Discussion in the proposal does not clearly establish that the "before" usage data for CCP are "on the shelf" or will be obtained through the review.

**Reviewer 06-12 (Rating: FUND)**

This project should be funded.

While in the near term, it is unlikely that the results of this project will increase the amount of North Dakota lignite utilized for power generation, it is likely to result in an action plan that has the potential to reduce the environmental impact of CCP waste in the future.

Although it was explicitly noted in the proposal as an objective, I recommend that the investigators try to determine from their audiences what additional technical information on CCP characteristics is needed by potential users to assess potential recycling opportunities. Lack of this information may be limiting the evaluation of future recycling approaches.